SONY

3-620-597-**11** (1)

Video Disk Unit

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

DVCAM™

DSR-DU1

© 2002 Sony Corporation

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

ADVARSEL

Lithiumbatteri - Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

Paristo voi räjähtää jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

For customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For customers in Europe

This product with the CE marking complies with the EMC Directive (89/336/EEC) issued by the Commission of the European Community.
Compliance with these directive implies conformity to the following European standards:
EN55103-1: Electromagnetic Interference (Emission)
EN55103-2: Electromagnetic Susceptibility (Immunity)
This product is intended for use in the following Electromagnetic Environment(s):
E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors) and E4 (controlled EMC environment, ex. TV studio).

Voor de Klanten in Nederland

Gooi de batterij niet weg maar lever deze in als klein chemisch afval (KCA).

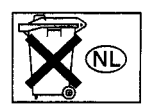


Table of Contents

Overview **4**
Features of This Unit 4
Supported Camcorders 4
Using the CD-ROM Manual 5
Getting the Best Performance from the DSR-DU1 ..... **6**
Places to Avoid 6
Operation 6
Care of the Unit 6
Names and Functions of Parts **7**
DSR-DU1 Video Disk Unit (in Supplied Case) 7
DSR-DU1 Video Disk Unit (Removed From Supplied Case) 10
CA-DU1 Camera Adaptor (option) 11
Example System Configurations **12**
Connecting to a Camcorder With an i.LINK Cable 12
Connecting to a Camcorder Through the CA-DU1 Camera Adaptor 13
Use As a Source Feeder Supporting the SBP2 Protocol 14
Use As a Source Feeder for a Nonlinear Editing System 14
Inserting and Replacing the Lithium Battery ... **15**
Operation **16**
Preparing the Power Supply 16
Menu Settings 17
Coupled Recording on the Camcorder Tape and Hard Disk 17
Recording the Image From the Camcorder to Hard Disk 18
Reviewing Content Immediately After Recording – a Recording Review Operation 19
Keeping a Recording of the Last Few Seconds of Material Before Pressing the Recording Button – Cache Recording 20
Time-Lapse Recording (or Interval Recording) 20
Playback 20
Setting Cue Points 21
Deleting Recorded Material (Clips) 21
Menus **22**
Menu Organization and Content 22
Making Menu Settings 23
LCD and Indicator Error Indications **25**
Specifications **26**
DSR-DU1 Video Disk Unit 26
CA-DU1 Camera Adaptor (option) 26
Getting the Best Performance From the Batter **27**

Overview

Features of This Unit

The DSR-DU1 Video Disk Unit incorporates a 2.5-inch, 40 gigabyte hard disk.
Connected to a Sony digital camcorder through the i.LINK interface, it is capable of recording at least three hours of video and audio signals in DVCAM format or DV format.

Integral camcorder mounting with dedicated adaptor

The optional CA-DU1 Camera Adaptor enables this unit to be attached to a digital camcorder (DSR-370/370P/570WS/570WSP or DSR-250/250P/300A/300AP/500WS/500WSP) equipped with an i.LINK interface. Using the CA-DU1 makes attachment to the camcorder safe and simple.

Increased recording times for compact camcorders

If your camcorder is a DSR-PD100A/PD100AP/PD150/PD150P (equipped with i.LINK interface), connect this unit directly to the comcorder using an i.LINK cable in place of the adaptor. This provides a recording time of at least three hours, equivalent to the recording time of a standard size DVCAM tape.
Recording can continue on the DSR-DU1 while changing the tape.

Use as an independent source feeder

Connected to a nonlinear editing system, the DSR-DU1 can be used as an independent source feeder. Further, using the same principle as in dubbing with a conventional VCR, video and audio signals can be provided to another device equipped with the i.LINK interface. The AV/C protocol can be used in this case.

Transfer of single files to an editor

Data recorded on the DSR-DU1 can be transferred as a file to a computer hard disk or similar, allowing efficient inclusion of material into a nonlinear editing system. The SBP2 protocol can be used for file transfer.

Convenient recording functions

- When DUPLICATE mode is set, you can record the same content on the DSR-DU1 and the connected camcorder.
- To avoid losing important scenes, the cache recording function keeps up to eight seconds of video in memory.
- For monitoring purposes, the interval recording function provides long-term recording.

Supported Camcorders

The DSR-DU1 can be used connected to any of the following camcorders.

- DSR-370/370P
- DSR-570WS/570WSP
- DSR-300A/300AP
- DSR-500WS/500WSP
- DSR-250/250P
- DSR-PD100A/PD100AP
- DSR-PD150/PD150P
- DCR-VX2000/VX2000E

Differences in supported units

The functions offered by the DSR-DU1 are restricted in some cases, depending on the connected camcorder. Details of differences in restrictions and characteristics are also described where necessary in the section "Operation" *(page 16)*.

	DSR-370/ 370P/ 570WS/ 570WSP	DSR-300A/ 300AP/ 500WS/ 500WSP	DSR-250/ 250P
Recording with camcorder start/ stop button	Yes even without tape [a)]	Coupled to tape	Coupled to tape
Playback on camcorder [b)]	Yes in viewfinder	No	Yes, in viewfinder and LCD
Monitor output from camcorder	Yes	No	Yes
Recording the camcorder video with the DSR-DU1 switch	Yes even without tape	Yes even without tape	Yes even without tape

	DSR-PD150/ PD150P	DSR-PD100A/ PD100AP	DCR-VX2000/ VX2000E
Recording with camcorder start/stop button	Coupled to tape	Coupled to tape [c)]	Coupled to tape [c)]
Playback on camcorder [a)]	Yes, in viewfinder or LCD	Yes, in viewfinder or LCD	Yes, in viewfinder or LCD
Monitor output from camcorder	Yes	Yes	Yes
Recording the camcorder video with the DSR-DU1 switch	Yes even without tape	Yes even without tape	Yes even without tape [a)]

a) It is necessary to change the factory default settings on the camcorder.

b) After a few minutes elapse without recording on the tape, the camcorder powers off. With the DSR-370/370P/570WS/570WSP, it is necessary to set the VTR TRIGGER switch to the "EXT ONLY" position.
c) For camcorders other than the DSR-370/370P/570/570WSP, it is necessary to switch from camera mode to VTR mode.

Using the CD-ROM Manual

The supplied CD-ROM includes operation manuals for the DSR-DU1 series of camera control unit (English, French, German, Italian Spanish and Chinese versions).

CD-ROM System Requirements

The following are required to access the supplied CD-ROM disc.

- Computer: PC with MMX Pentium 166 MHz or faster CPU, or Macintosh computer with PowerPC CPU.
  - Installed memory: 32 MB or more
  - CD-ROM drive: × 8 or faster
- Monitor: Monitor supporting resolution of 800 × 600 or higher

When these requirements are not met, access to the CD-ROM disc may be slow, or not possible at all.

Preparations

The following software must be installed on your computer in order to use the operation manuals contained in the CD-ROM disc.

- Microsoft Internet Explorer Version 4.0 or higher, or Netscape Navigator Version 4.0 or higher
- Adobe Acrobat Reader Version 4.0 or higher

Notes

- If Microsoft Internet Explorer is not installed, it may be downloaded from the following URL: http://www.microsoft.com/ie
- If Netscape Navigator is not installed, it may be downloaded from the following URL: http://home.netscape.com/
- If Adobe Acrobat Reader is not installed, it may be downloaded from the following URL: http://www.adobe.com/products/acrobat/readstep.html

To Read the CD-ROM Manual

To read the operation manual contained in the CD-ROM disc, do the following.

1 Insert the CD-ROM disc in your CD-ROM drive.

A cover page appears automatically in your browser.
If it does not appear automatically in the browser, double click the index.htm file on the CD-ROM disc.

2 Select and click the operation manual that you want to read.

A PDF file of the operation manual opens.

Note

If you lose the CD-ROM disc or become unable to read its content, for example because of a hardware failure, contact a Sony service representative.

- MMX and Pentium are registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
- PowerPC is a registered trademark of International Business Machines Corporation.
- Macintosh is a registered trademark of Apple Computer, Inc.
- Microsoft is a registered trademark of Microsoft Corporation in the United States and/or other countries.
- Netscape Navigator is a registered trademark of Netscape Communications Corporation in the U.S. and other countries.
- Adobe and Acrobat are registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Getting the Best Performance from the DSR-DU1

Places to Avoid

Do not leave the unit in the following places, whether operating or stored. Doing so could lead to a malfunction.

- Places subject to very high temperatures. The inside of a car with the windows closed in hot sun can reach an extremely high temperature, and if the unit is left there it may be deformed or malfunction.
- Places exposed to direct sunlight or close to heating equipment. The unit may be deformed or malfunction.
- Places subject to extreme vibration
- Places subject to strong magnetic fields
- Sand dunes, sandy beaches, and other places subject to blown sand. At the seashore and in other sandy locations where there may be blown sand, ensure that the sand does not reach the unit. This could cause not only a malfunction, but in some cases render the unit unrepairable.

Operation

- Do not operate where the unit would be exposed to a powerful electromagnetic radiation. Recording and playback may not function correctly.
- Do not operate close to a television or radio receiver. There may be interference from the television or radio receiver.
- Do not connect the AC adaptor/charger or charger to an electronic voltage-changer. This may cause heat to be generated, or lead to malfunction.

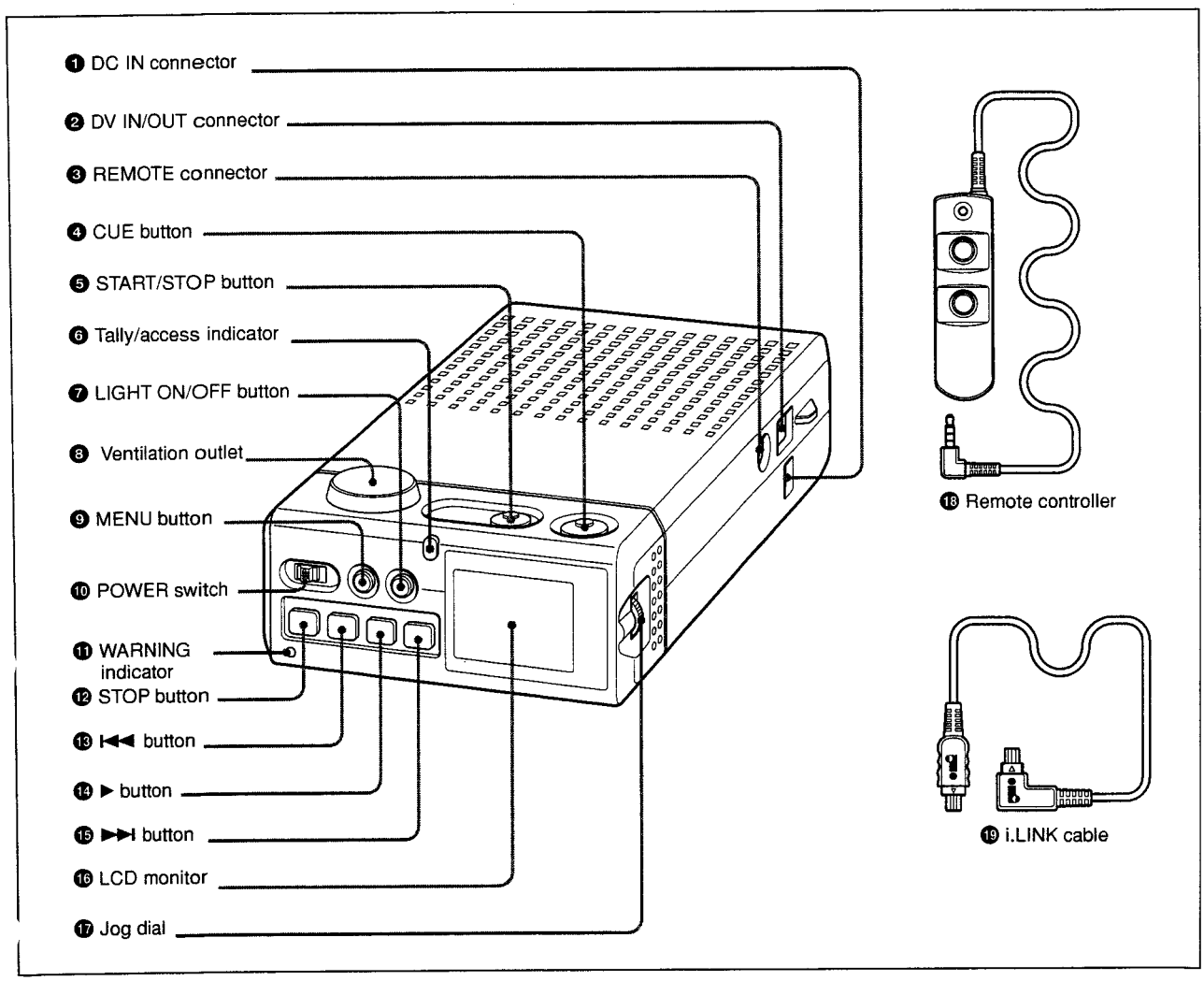
Care of the Unit

If the unit is dirty, clean it by wiping with a soft cloth.

- If very dirty, use a cloth steeped in diluted mild detergent and wrung out well to wipe the unit clean, then finish off with a dry cloth.
- Do not use alcohol, thinners, or other organic solvents. These can cause the material of the unit to deteriorate, or remove the finish.
- If using a chemically impregnated cloth, follow the instructions supplied with the cloth.
- Avoid getting volatile liquids such as insecticides on the unit, or leaving it in contact with rubber or plastic products for a long time, as this can cause the material of the unit to deteriorate, or remove the finish.

Names and Functions of Parts

DSR-DU1 Video Disk Unit (in Supplied Case)



❶ **DC IN connector**
Connect the power supply to the DSR-DU1 from an AC adaptor or similar.

❷ **DV IN/OUT connector (4-pin, IEEE1394 compliant)**
Connect to a camcorder or computer with an i.LINK cable.

❸ **REMOTE connector**
Connect the remote controller supplied with the unit.

❹ **CUE button**
Press this to enter a cue point. You can enter cue points either during recording or playback, and a maximum of 400 cue points can be set.

❺ **START/STOP button**
This starts or stops recording on this unit.

❻ **Tally/access indicator**
The color this lights indicates the state.
Red: During recording
Green: During hard disk access
Orange: During cue point entry
This also flashes to indicate a problem with the DSR-DU1 *(see page 25)*.

❼ **LIGHT ON/OFF button**

This turns the LCD monitor light on or off.

⑧ Ventilation outlet
This is the outlet from the cooling fan.

Note

Be careful not to obstruct the ventilation opening.

⑨ MENU button
Pressing this button displays the menu in the LCD monitor *(see page 22)*. Press once more to return to the DSR-DU1 status display (see next item).

⑩ POWER switch
This powers the DSR-DU1 on or off.

⑪ WARNING indicator
This indicator lights or flashes when there is a problem with the DSR-DU1 *(see page 25)*.

⑫ STOP button
During playback from the DSR-DU1 hard disk, pressing this button stops the playback.

⑬ ⏮ (previous) button
During playback, pressing this makes a reverse search at ×5 speed.
When stopped, pressing this button once moves to the previous recording start point. Holding down the button for at least two seconds moves back 10 clips*.

*In this system, the term "clip" is used to refer to the unit of recording from the start point to the end point.

⑭ ▶ (playback) button
This plays back from any position on the DSR-DU1 hard disk.

⑮ ⏭ (next) button
During playback, pressing this makes a forward search at ×5 speed.
When stopped, pressing this button once moves to the next recording start point. Holding down the button for at least two seconds moves forward 10 clips*.

*In this system, the term "clip" is used to refer to the unit of recording from the start point to the end point.

⑯ LCD monitor
This shows the DSR-DU1 status *(see next item)* or a menu *(see page 22)*.

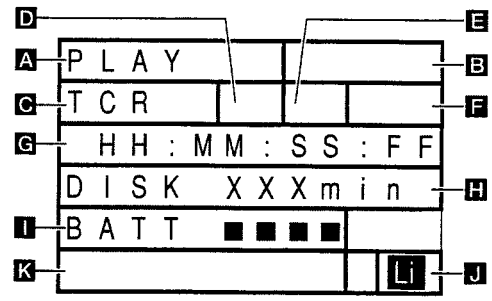
⑰ Jog dial
This is used to operate the menu displayed on the LCD monitor, and change TC/UB/clip settings. Turn the dial to select an item, and press to confirm *(see page 23)*.

⑱ Remote controller
Connect to the REMOTE connector on the main unit. This has a START/STOP button, CUE button, and tally indicator, and the button functions are the same as those on the main unit. The tally indicator lights red only during recording.

⑲ i.LINK cable
This cable is supplied with the DSR-DU1, and has a 4-pin connector at each end. Connect the L-shaped end to the main unit.

LCD monitor display

When the LCD monitor is not displaying the menu, it shows the DSR-DU1 status as follows.

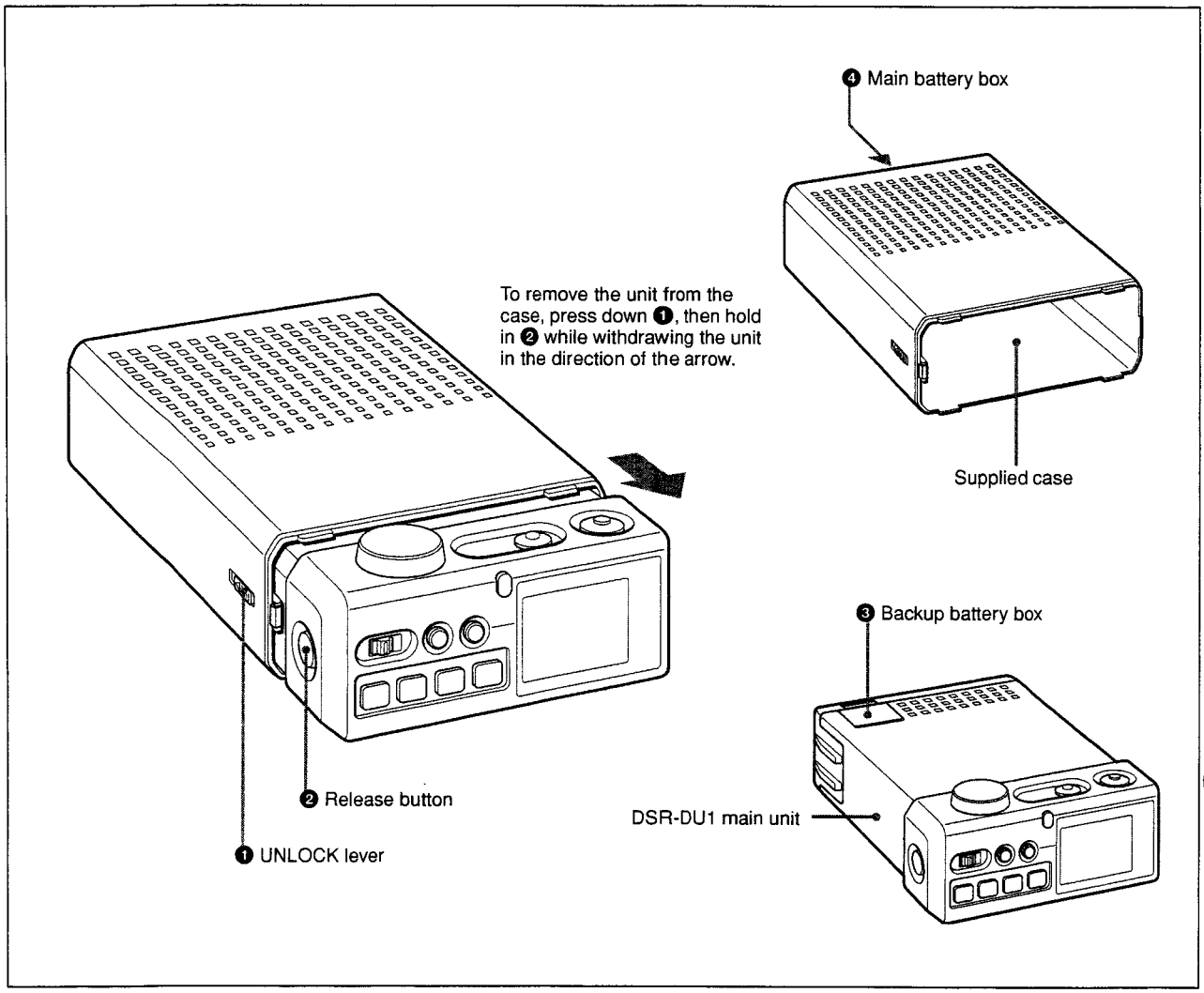


Display area	Type	Indication	Meaning
A	Command	PLAY	Playback
		P-PAUSE	Playback paused
		REC	Recording
		R-PAUSE	Recording paused
		FWD	Search forward
		REV	Reverse search
		STOP	Stopped
		>>	Moving to next recording start point
		<<	Moving to previous recording start point
		PC-REMOTE	Using SBP2 protocol
B	Recording mode	Blank	Normal
		INT	Interval recording

Display area	Type	Indication	Meaning
		PARA	Coupled to camcorder
		Blank	When A is "PC-REMOTE"
		DUPLICATE	DUPULICATE mode
C	Timecode type	TCR	Timecode reader timecode
		TCG	Timecode generator timecode
		UBR	Timecode reader user bit data
		UBG	Timecode generator user bit data
	Clip No.	xxxx	4 characters
		Blank	When A is "PC-REMOTE"
D	Timecode mode	Blank	Drop-frame mode
		NDF	Non-drop-frame mode
E	Timecode generator mode	Blank	
		EXT	Locked to external timecode
F	Cache recording	Blank	Cache recording function is off.
		CACHE	Cache recording function is on.
G	Timecode value (When C is TCR or TCG)	hh:mm:ss:ff	While the jog dial is pressed, this shows the recording time as hh:mm:ss.
	User bit value (When C is UBR or UBG)	xx yy zz ww	While the jog dial is pressed, this shows the recording date
	Time from beginning of file (When C is a file name)	hh:mm:ss	While the jog dial is pressed, this shows the recording length of the file.
		--:--:--:--	When A is "PC-REMOTE"
H	Remaining hard disk capacity	DISK XXXmin	

Display area	Type	Indication	Meaning
I	Remaining main battery capacity	BATT [■■■■]	Adequate battery capacity
		BATT [■■■]	
		BATT [■■]	
		BATT [■] (1 flash/second)	
		BATT (4 flashes/second)	Inadequate capacity to operate
J	Remaining backup battery capacity	Li (1 flash/second)	Battery should be replaced.
		Li (4 flashes/second)	Since data integrity cannot be guaranteed, it is not possible to write to the hard disk.
K	Alarms	MEMORY	Shock-proof memory is full.
		i.LINK (1 flash/second)	When i.LINK input cannot be detected, this flashes once per second. This does not apply for i.LINK output.

DSR-DU1 Video Disk Unit (Removed From Supplied Case)


❹ Main battery box
To remove the unit from the case, press down ❶, then hold in ❷ while withdrawing the unit in the direction of the arrow.
Supplied case
❸ Backup battery box
DSR-DU1 main unit
❷ Release button
❶ UNLOCK lever

❶ **UNLOCK lever**
To remove the main unit from the supplied case, first press this lever down.

❷ **Release button**
To remove the main unit from the supplied case, press the UNLOCK lever down, then hold in this button while removing the unit.

❸ **Backup battery box**
Open the lid, and insert the supplied lithium battery (CR2032). This acts as a backup power supply for the main unit.

For details of fitting and replacement, see "Inserting and Replacing the Lithium Battery" (page 15).

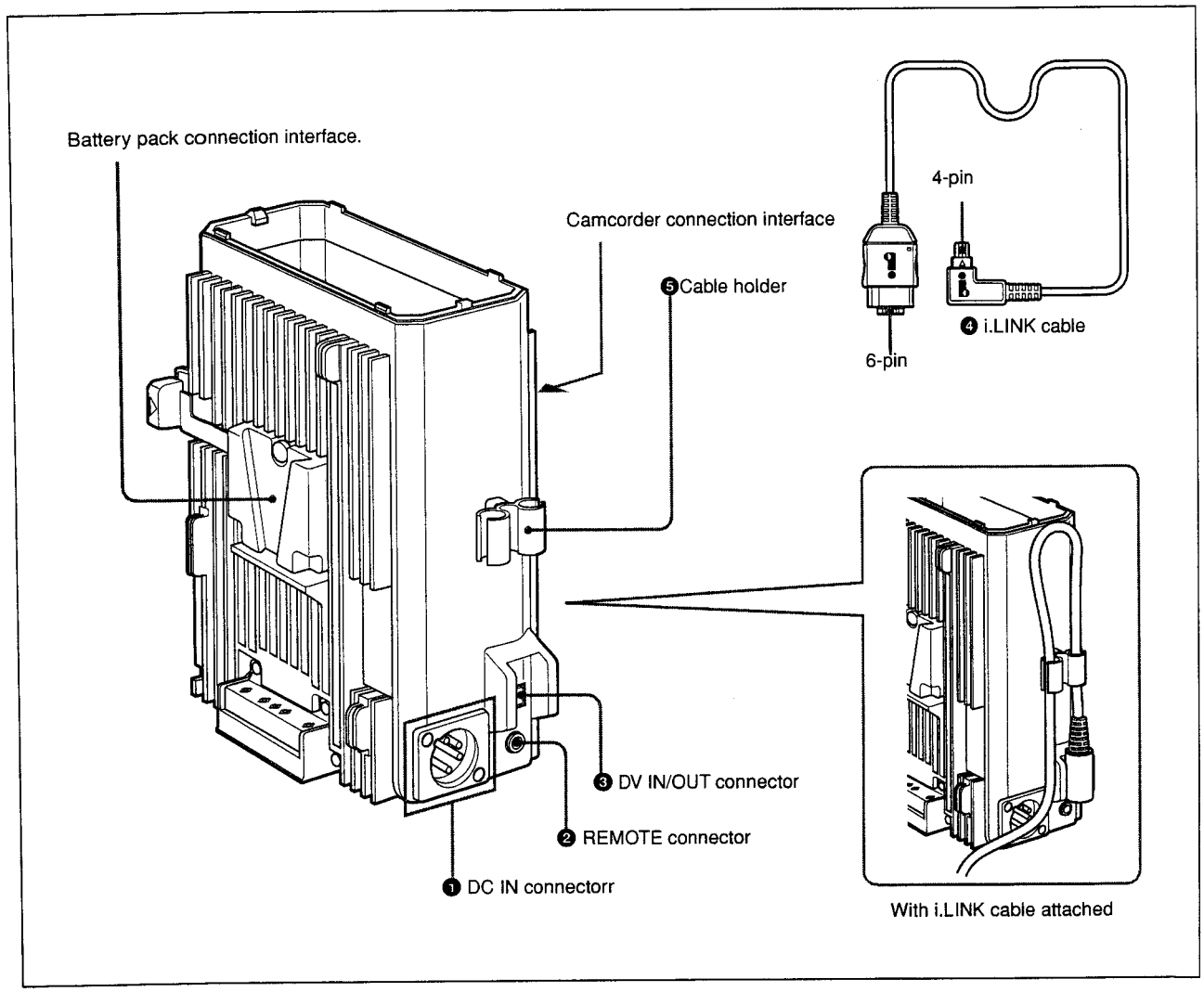
Note

This unit keeps data required to protect the hard disk data using the backup power supply. Therefore, when the backup battery capacity is low, recording is not possible.

❹ **Main battery box**
Fit the optional NP-F960/F750 battery pack. This acts as the main power supply for the DSR-DU1. To remove the battery pack, hold down the PUSH button on the side of the box.

For details of fitting, see "Fitting the battery " (page 17).

CA-DU1 Camera Adaptor (option)



❶ **DC IN connector**
Connect the power supply from an AC adaptor or similar.

❷ **REMOTE connector**
Connect the remote controller supplied with the DSR-DU1.

❸ **DV IN/OUT connector (4-pin)**
Connect to the camcorder using the i.LINK cable (4-pin – 6-pin) supplied with the camera adaptor.

❹ **i.LINK cable (4-pin – 6-pin)**
Connect the 4-pin connector to the camera adaptor, and the 6-pin connector to the camcorder.

❺ **Cable holder**
Use this when connecting the camera adaptor and camcorder with an i.LINK cable.

Example System Configurations

Connecting to a Camcorder With an i.LINK Cable

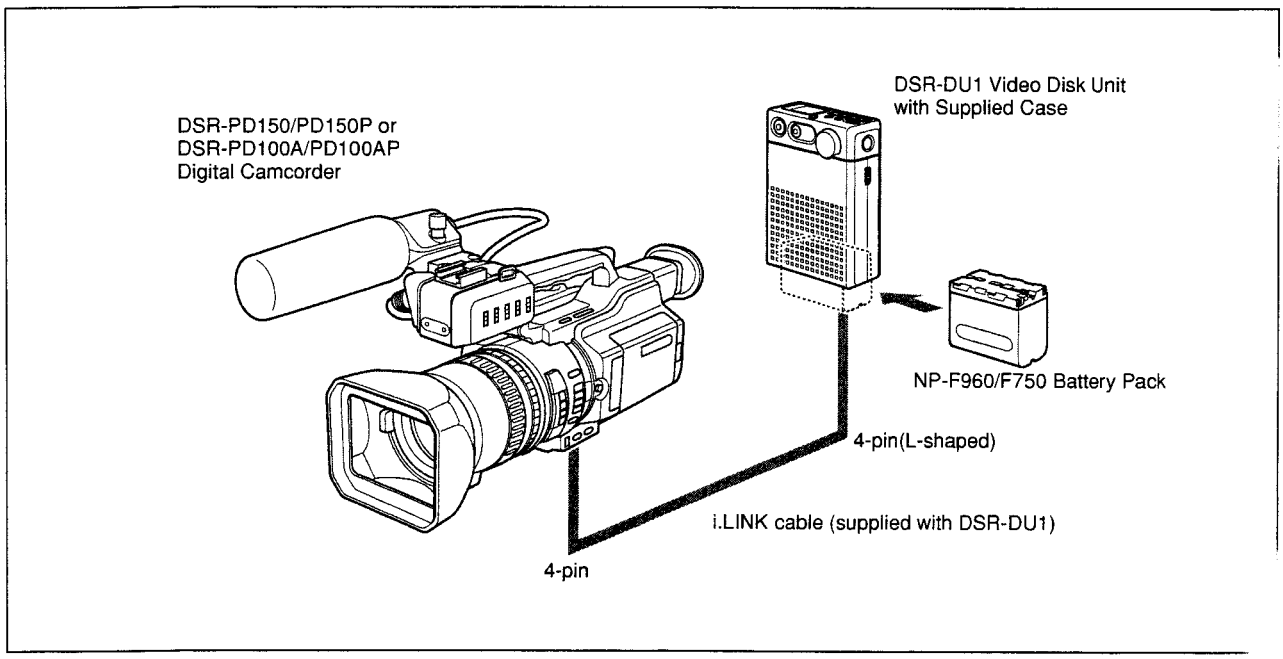
As an example, the following illustrates connection to a DSR-PD150/PD150P Digital Camcorder.

1 Leave the DSR-DU1 main unit in the supplied case.

2 With the i.LINK cable (4-pin - 4-pin) supplied with the DSR-DU1, connect together the DV IN/OUT connectors of the DSR-DU1 and the camcorder.

The L-shaped end of the i.LINK cable connects to the DSR-DU1.

3 Provide the power supply by any of the following methods.
- Install a battery pack (NP-F960/F750).
- Connect an AC adaptor to the DSR-DU1 DC IN connector.



Connecting to a Camcorder Through the CA-DU1 Camera Adaptor

As an example, the following illustrates connection to a DSR-370/370P/570WS/570WSP Digital Camcorder.

1 Remove the DSR-DU1 main unit from the supplied case.

2 Attach the CA-DU1 Camera Adaptor to the camcorder.

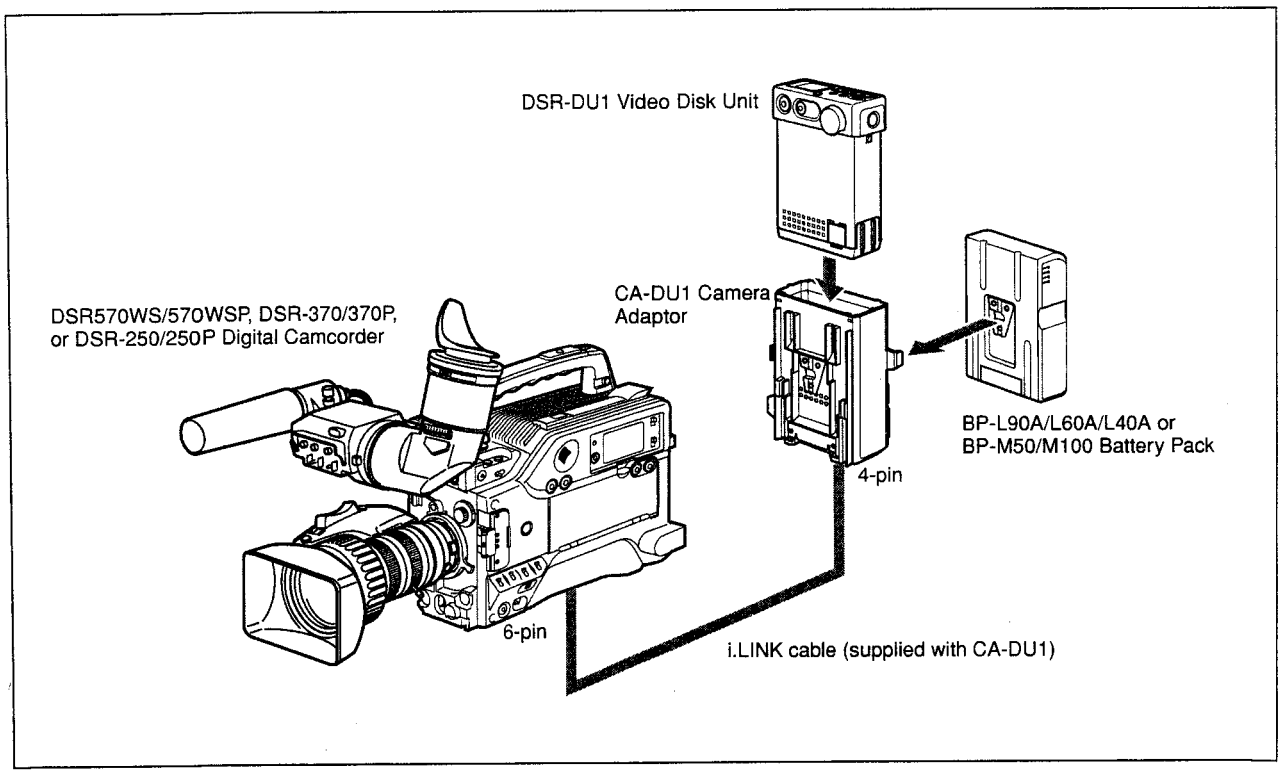
3 With the i.LINK cable supplied with the camera adaptor, connect the 6-pin connector to the DV OUT connector of the camcorder, and the 4-pin connector to the DV IN/OUT connector of the camera adaptor.

4 Insert the DSR-DU1 main unit in the camera adaptor.

5 Provide the power supply to the camcorder and DSR-DU1 by any of the following methods.
- Install a battery pack (BP-L90A/L60A/L40A or BP-M50/M100).
- Connect an AC adaptor to the camera adaptor DC IN connector.

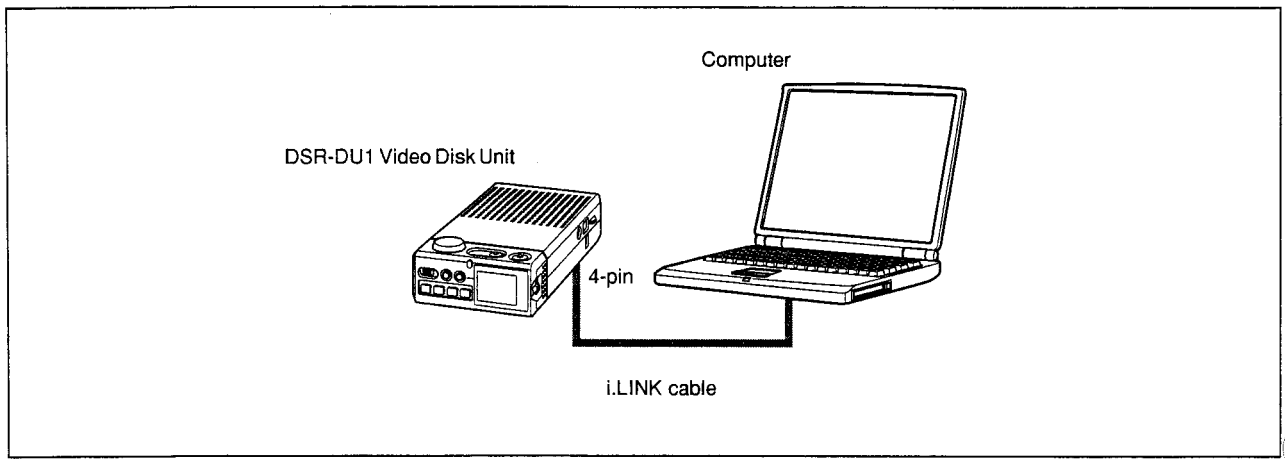
Note

Whe the DSR-DU1 is connected, do not use the DC IN connector of the camcorder. This connector does not supply power to the DSR-DU1.



Use As a Source Feeder Supporting the SBP2 Protocol

You can transfer video material recorded on the DSR-DU1 as a file in DV format to a nonlinear editing system or personal computer. The recording start point and end point are also transferred, for efficient logging on the computer.



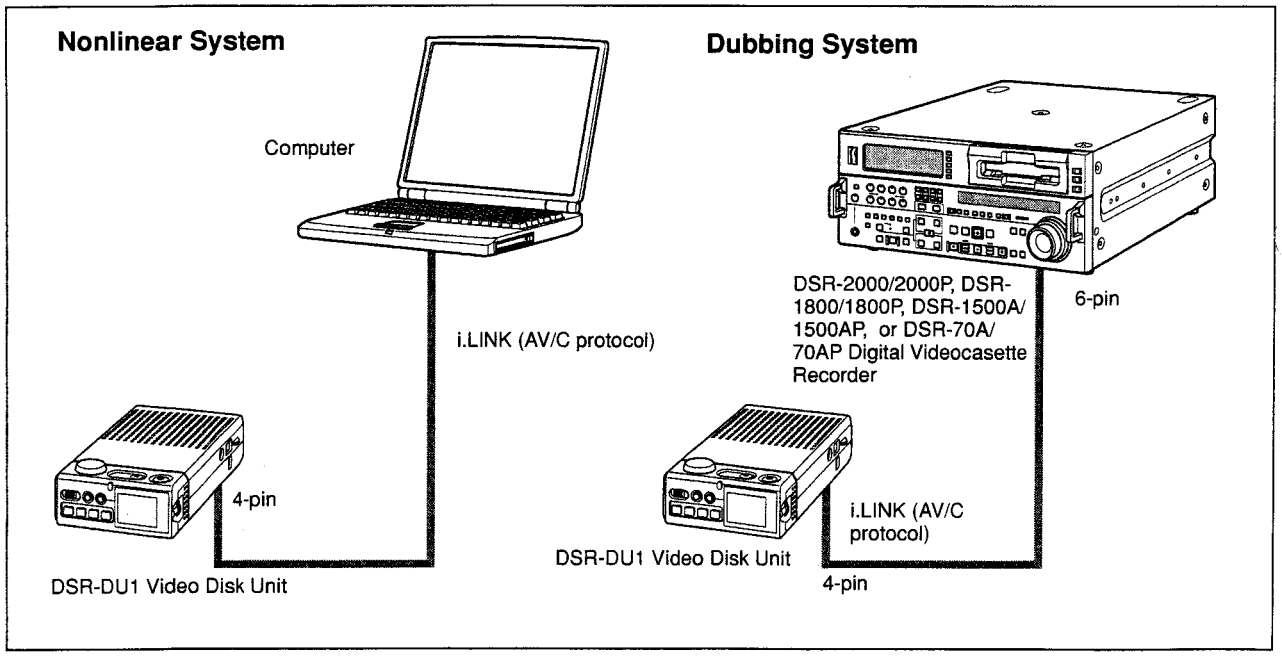
Notes

- When using the SBP2 protocol, in menu page 1, set PC REM to ENA *(see page 22)*.
- When using the DSR-DU1 as a source feeder, in menu page 1 set MODE to STD, and in menu page 3 set PARAREC to OFF.

Use As a Source Feeder for a Nonlinear Editing System

By connecting to a nonlinear editing system, you can use the DSR-DU1 as a standalone source feeder for video/audio signals.

You can also carry out dubbing by connecting a VCR.



Notes

- When using the AV/C protocol for nonlinear editing, in menu page 1, set PC REM to DIS *(see page 22)*.
- When using the DSR-DU1 as a source feeder, in menu page 1 set MODE to STD, and in menu page 3 set PARAREC to OFF.

Inserting and Replacing the Lithium Battery

This camcorder uses a lithium battery to retain stored data. When using the camcorder for the first time, be sure to insert the supplied lithium battery (CR2032). The camcorder will not operate correctly without this lithium battery.

Lifetime of the lithium battery

When the lithium battery's voltage falls, the lithium backup battery warning Li flashes once per second in the display window. If this warning appears, replace the lithium battery (CR2032) within three or four days. The lithium battery has an average service life of about two years.

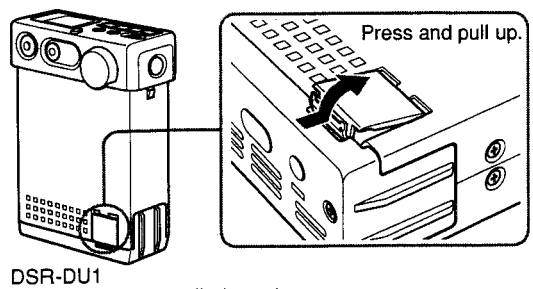
Inserting or replacing the lithium battery

Notes

- Carefully read the instructions for inserting and replacing the lithium battery. Lithium batteries can explode if misused.
- Use only CR2032 Lithium Batteries. Other types of lithium batteries may come loose when this camcorder is moved. If you have difficulty finding CR2032 Lithium Batteries, contact your Sony dealer.

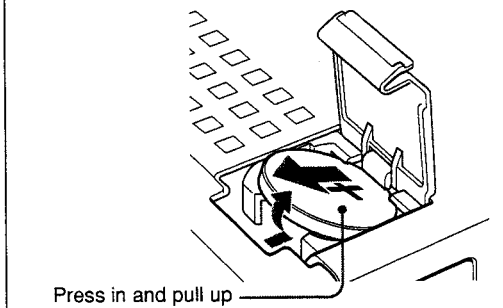
1 Turn the POWER switch on.

2 Press the catch at the top of the battery cover and open the cover.



DSR-DU1
(removed from supplied case)

3 Take out the lithium battery.



4 Reverse step **3** to insert a replacement lithium battery. Make sure that the + symbol on the battery is facing you.

5 Close the battery cover.

Operation

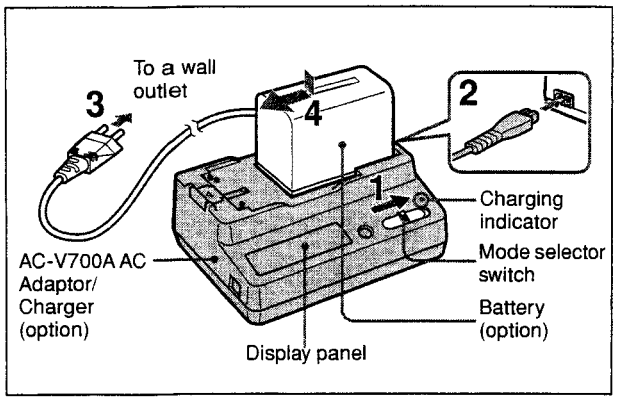
Preparing the Power Supply

Charging the battery

When using an optional InfoLithium* battery (L-series) as the power supply for the DSR-DU1, use the following method to charge the battery before use.

* InfoLithium is a trademark of Sony Corporation.

When charging, follow the instructions supplied with the AC adaptor/charger (option).



1 Set the mode selector switch to "Charge."

Note

Charging is not possible if set to Video/Camera.

2 Connect the power cord.

3 Plug into the wall outlet.

4 Press down the battery and slide in the direction of the arrow to attach.

Charging starts, and the charging indicator lights. When charging is completed, all of the segments of the battery symbol appear in the display panel. (Normal charging)
The charging indicator goes off, but if you continue charging until the battery indication "FULL" appears, the battery capacity will be somewhat longer. (Full charging)

5 When charging is complete, remove the battery from the AC adaptor/charger.

Notes

- Do not allow the battery to get wet.
- When storing the battery out of use for a considerable period, first charge it fully, then use it to exhaustion. Then store the battery in a cool place.

About the InfoLithium battery

This is a lithium-ion battery, which for supporting devices notifies its charge state electronically.
The L-series InfoLithium battery are identified by a mark.

Note

The DSR-DU1 can be used with an InfoLithium battery, but does not support the communications function for charging state.

Battery remaining time indication in the AC adaptor/charger display panel

This indication is provided by data communications between the AC adaptor and the InfoLithium battery. Please note that the DSR-DU1 does not have a data communications capability, so there may be a discrepancy between the actual battery remaining time and the indication.

Battery charge state indication

The LCD panel shows an approximate remaining time for continuous shooting. This may not be an accurate prediction, depending on the pattern of use.
If the battery indication shows adequate remaining time, but the power fails immediately, charge the battery to its fully-charged state. This will correct the indication.

Charging time

Charging times for a completely exhausted battery are as follows.

Battery	Time for full charge (Time for normal charge)
NP-F750	Approx. 170 minutes (110 minutes)
NP-F960	Approx. 245 minutes (185 minutes)

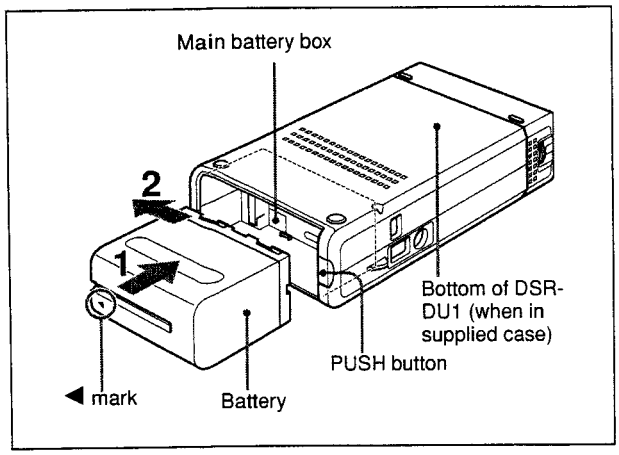
Operating times for continuous recording

Operating times for continuous recording using an NP-F960 or NP-F750 InfoLithium battery are as follows.

Battery	Operating time from full charge (normal charge)
NP-F750	Approx. 180 minutes (160 minutes)
NP-F960	Approx. 360 minutes (320 minutes)

Fitting the battery

Use the following procedure.



1 Insert the battery in the main battery box at the rear of the main unit.

2 Slide the battery in the direction indicated by the ◀ mark on the top of the battery.

Removing the battery from the main unit

Hold down the PUSH button at the end of the battery box, and slide the battery in the opposite direction to that indicated by the ◀ mark to remove.

Operating from a wall outlet

For prolonged operation, such as playing a tape, you can operate the unit from a domestic wall outlet, without worries about battery life.

1 Set the AC adaptor/charger mode selector switch to "Video/Camera."

Note

When set to "Charge" there is no power supply.

2 Connect the DK cable to the DC IN connector of the DSR-DU1.

3 Connect the DK cable to the AC adaptor/charger.

4 With the power cord, connect the AC adaptor/charger to a wall outlet.

Note

You can leave the battery installed while operating from AC power.

To use the AC adaptor/charger from a vehicle power supply

Connect the AC adaptor/charger to the vehicle power supply using an optional car battery cable.

For details, refer to the operating instructions for the AC adaptor/charger.

Menu Settings

Before using the DSR-DU1 for the first time after purchase, the following menu settings are necessary.

- SYSTEM (525/625 selection) *(see page 23)*
- DATE PRESET (date and time setting) *(see page 23)*

Check the other individual items, and if required, change their settings.

For details, see page 22.

Coupled Recording on the Camcorder Tape and Hard Disk

To record on both the tape and hard disk while coupled to the camcorder start/stop button, use the following procedure.

Note

If the DSR-DU1 and the connected camcorder are both powered on, there may be no i.LINK input from the camcorder to the DSR-DU1, depending on the camcorder. In this case, on the LCD monitor of the DSR-DU1, "i.LINK" flashes once per second; temporarily disconnect the i.LINK cable.

In standard mode

1 Power on the DSR-DU1.

2 Make the following menu settings.

- In page 1 set MODE to STD *(see page 22)*.
- In page 3 set PARAREC to ON *(see page 22)*.

3 Load a tape into the camcorder.

Notes

- If the camcorder is a model DSR-370/370P/570WS/570WSP, set the camcorder menu item i.LINK CTL to REC/P or ALL. (For more details refer to the section of the camcorder operating instructions describing the settings in the advanced menu.)
  Also set the VTR TRIGGER switch to INT ONLY.
- If the camcorder is a model DSR-250/250P, set the camcorder menu item EXT REC CTL to OFF. (For more details refer to the camcorder operating instructions.)
  Note that even if the camcorder has EXT REC

CTL set to ON, you can record on the DSR-DU1 coupled to the camcorder tape operations. To do this, on the DSR-DU1 set the menu item PARAREC to OFF.

4 Press the camcorder start/stop button.

Recording starts on the camcorder tape and the hard disk of the DSR-DU1.
If the cache recording function of the DSR-DU1 is on, the contents of cache memory are first written to the hard disk.

5 Press the camcorder start/stop button.

Recording stops on the camcorder tape and the hard disk of the DSR-DU1.

If the tape ends during recording

1 Press the EJECT button on the camcorder.

2 Change the tape.

3 Press the start/stop button on the camcorder.

The DSR-DU1 continues recording while you change the tape.

Note

In the case of some camcorders such as the DSR-PD100A/100AP and DCR-VX2000/VX2000E, if several minutes elapse with no recording on the tape (while changing tapes or while recording is paused), the camcorder powers off.
Depending on the camcorder, when you change tapes, the sound of the operation may be recorded, or the i.LINK input to the DSR-DU1 may be interrupted.

In DUPLICATE mode

In DUPLICATE mode, the hard disk is coupled to the tape, and records the same audio, video, and timecode as the tape.
Use the following procedure.

1 Power on the DSR-DU1.

2 In menu page 1, set MODE to DUP *(see page 22)*.

3 Load a tape into the camcorder.

Notes

- If the camcorder is a model DSR-370/370P/570WS/570WSP, set the camcorder menu item i.LINK CTL to REC/P or ALL. (For more details refer to the section of the camcorder operating instructions describing the settings in the advanced menu.)
To couple the operation of the DSR-DU1 to the camcorder, set the VTR TRIGGER switch to INT ONLY.
- If the camcorder is a model DSR-250/250P, set the camcorder menu item EXT REC CTL to OFF. (For more details refer to the camcorder operating instructions.)

4 Press the camcorder start/stop button.

Recording starts simultaneously on the camcorder tape and the hard disk of the DSR-DU1.

5 Press the camcorder start/stop button.

Recording stops simultaneously on the camcorder tape and the hard disk of the DSR-DU1.

If the tape ends during recording

1 Press the EJECT button on the camcorder.

2 Change the tape.

3 Press the start/stop button on the camcorder.

The DSR-DU1 continues recording while you change the tape.

Notes

- In the case of the DSR-PD100A/100AP and DCR-VX2000/VX2000E, if several minutes elapse with no recording on the tape (while changing tapes or while recording is paused), the camcorder powers off.
- The cache recording function does not operate.
- Depending on the camcorder, there may be a discrepancy of a few frames between the DSR-DU1 recording and the tape recording, at the recording start point and end point.
- The timecode generator counting mode is automatically set to EXT.
- In DUPLICATE mode, the playback function does not operate.

Recording the Image From the Camcorder to Hard Disk

Note

If the DSR-DU1 and the connected camcorder are both powered on, there may be no i.LINK input from the camcorder to the DSR-DU1, depending on the

camcorder. In this case, on the LCD monitor of the DSR-DU1, "i.LINK" flashes once per second; temporarily disconnect the i.LINK cable.

When you press the START/STOP button on the DSR-DU1

Except when operating coupled to the camcorder start/stop buttons, it is not necessary to load a tape into the camcorder. Use the following procedure.

Note

In the factory default setting state of the DCR-VX2000/VX2000E, if it is operated for several minutes without a tape loaded, a demonstration function automatically starts.
To use as a camera without a tape, set this mode to "OFF." For details, refer to the Operating Instructions for the DCR-VX2000/2000E.
Some camcorders may power off if several minutes elapse with no tape operation.

1 Power on the DSR-DU1.

2 Press the START/STOP button on the DSR-DU1 main unit or remote controller.

This starts recording.

3 Press the START/STOP button on the DSR-DU1 main unit or remote controller once more.

This stops recording.

When you press the DSR-370/370P/570WS/570WSP start/stop button

If the camcorder is a DSR-370/370P/570WS/570WSP, even if there is no tape loaded in the camcorder, you can record on the DSR-DU1 by pressing the camcorder start/stop button.

Notes

- If the camcorder is a model DSR-370/370P/570WS/570WSP, set the camcorder menu item i.LINK CTL to ALL. (For more details refer to the section of the camcorder operating instructions describing the settings in the advanced menu.)
- Set the DSR-370/370P/570WS/570WSP VTR TRIGGER switch to EXT ONLY or PARALLEL.

Use the following procedure. (Read this in conjunction with the operating instructions for the DSR-370/370P/570WS/570WSP.)

1 Power on the DSR-DU1.

2 Make the following menu settings.

- In page 1 set MODE to STD *(see page 22)*.
- In page 3 set PARAREC to OFF *(see page 22)*.

3 Press the DSR-370/370P/570WS/570WSP start/stop button.

Recording starts.

4 Press the DSR-370/370P/570WS/570WSP start/stop button.

Recording stops.

Reviewing Content Immediately After Recording – a Recording Review Operation

When you stop recording, you can automatically play back the last 15 seconds or so of the recorded material, or from the beginning of the file if this is shorter.

Notes

- For the DSR-300A/300AP/500WS/500WSP, a recording review operation is not possible.
- In the case of the DSR-370/370P/570WS/570WSP, stop the tape, and set the camcorder VTR TRIGGER switch to EXT ONLY. In this case, however, frame-accurate continuous recording on the tape is not guaranteed.
- For the DSR-PD150/PD150P/PD100A/PD100AP, DSR-250/250P, and DCR-VX2000/VX2000E, set the camcorder to VTR mode.

To carry out a recording review operation, press the ▶ (playback) button.

Notes

- For the i.LINK interface to switch from output to input takes several seconds. During this interval, no playback video is output.
- After playback ends, it takes several seconds for the i.LINK interface to switch from output to input, and during this interval, no recording is possible.
- In DUPLICATE mode, and during interval recording, the playback function does not operate.

Keeping a Recording of the Last Few Seconds of Material Before Pressing the Recording Button – Cache Recording

Cache recording means that the last few seconds of video and audio captured by the camcorder are always held in a cache memory, and are automatically recorded on the hard disk when the recording button is pressed. Set the number of seconds of recording held in cache memory with the CACHE item on menu page 3. *(See page 22.)*
Other than this, no operation is required.

Notes

- If the power is turned off during cache recording, the previous few seconds of video may not be recorded.
- If the interval between a recording pause point and the next recording start point is less than the set number of seconds for cache recording, then the cache recording starts from the recording paused point.

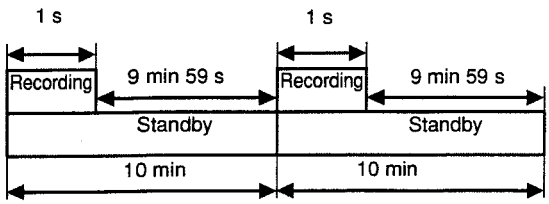
Time-Lapse Recording (or Interval Recording)

This function is convenient for recording observations of very slow events, such as the opening of a flower. Use the following procedure.

1 Make the following menu settings.

- In page 1 set MODE to INT *(see page 22)*.
- In page 4 set INT TIM and INT REC *(see page 22)*.
  INT TIM: Recording interval (select from 30 seconds, 1 minute, 5 minutes, and 10 minutes)
  INT REC: Duration of each recording segment (select from 0.5 seconds, 1 second, 1.5 seconds, 2 seconds)

Example settings:
When INT TIME is set to 10 minutes, and INT REC to 1 second, the recording is as follows.



When the settings are completed, the "INT" indication flashes once per second.

2 Press the START/STOP button.
Interval recording starts. During recording, the indication "INT" appears.

Exiting the interval recording mode

In menu page 1 set MODE to anything other than INT.

To carry out normal recording during interval recording

Press the START/STOP button. You can carry out normal recording once only. During normal recording, the "INT" indication flashes once per second, indicating that an interval recording start is pending.
To end normal recording, press the START/STOP button once more.
To restart interval recording, press the START/STOP button once more. The "INT" indication is replaced by "INT".

Notes

- The cache recording time is automatically set to zero.
- The function of coupling to the camcorder is automatically turned off.
- While the interval recording mode is active, the playback function does not operate.

Playback

You can check the playback video from the DSR-DU1 in the camcorder viewfinder or LCD monitor.

- In the case of the DSR-370/370P/570WS/570WSP, set the camcorder VTR TRIGGER switch to EXT ONLY.
- In the case of the DSR-PD150/PD150P/PD100A/PD100AP, DSR-250/250P, and DCR-VX2000/VX2000E, set the camcorder to VTR mode.

To play back

Press the DSR-DU1 ▶ button.

To search at five times normal speed

With the ▶ button of the DSR-DU1 pressed for playback, hold down the ▶▶ button to make a forward search at five times normal speed.
Release the button to return to normal speed playback.
Similarly, hold down the ◀◀ button to make a reverse search at five times normal speed.

To jump to a recording start point

With the DSR-DU1 stopped, press the ◀◀ button to jump to the immediately previous recording start point. Hold down the button for at least two seconds to jump back to the start point 10 files earlier.
Press the ▶▶ button for the same effect in the opposite direction.

Using the above jump and search operations, you can rapidly start playback on the DSR-DU1 from any desired point.

Notes

- For the i.LINK interface to switch from output to input takes several seconds. During this interval, no playback video is output.
- After playback ends, it takes several seconds for the i.LINK interface to switch from output to input, and during this interval, no recording is possible.
- In DUPLICATE mode, and during interval recording, the playback function does not operate.
- If the total number of clips has exceeded 750, playback of consecutive clips may involve a discontinuity of image or sound or both at joints of clips (i.e. at recording start points).

Setting Cue Points

On the DSR-DU1, information identifying the recording start and pause points is automatically recorded to the hard disk.
By pressing the CUE button during recording/playback, you can record any point on the hard disk in the form of cue point information.
With a nonlinear editing system that supports this information, you can use material recorded on the DSR-DU1 for efficient editing.

Deleting Recorded Material (Clips)

To delete the immediately previous recorded clip

In the menu page 3, select DELETE LAST *(see page 22)*.
By repeating this operation, you can delete clips from the hard disk in sequence from the latest.

To delete all clips

In the menu page 5, select DELETE ALL *(see page 23)*.
If the number of clips is large, deleting them may take several minutes.

Menus

Most of the DSR-DU1 settings are carried out in the menus.

Menu Organization and Content

Page 1

Item	Setting and values (factory default settings shown by an asterisk)
MODE	Sets the recording mode. • STD*: Standard mode • DUP: Mode in which operation is always coupled to the tape operation, recording the same video and timecode values. The items to be forcibly changed are displayed. • INT: Interval recording mode. The items to be forcibly changed are displayed.
PC REM	Select whether to enable or disable access by the SBP2 protocol. • DIS*: Disable • ENA: Enable

Page 2 (When MODE is set to STD or INT only)

Item	Setting and values (factory default settings shown by an asterisk)
TCG	Set the timecode advancement mode. • FREE: Always advancing, in step with the internal timecode generator. • REC*: Advancing during recording only, in step with the internal timecode generator. • EXT: Synchronized to the external timecode generator. When MODE is set to DUP, this is always EXT.
TC PRESET	Switch to the screen for setting the timecode preset value. Carry out the operation with the jog dial.
UB PRESET	Switch to the screen for setting the user bit preset value. Carry out the operation with the jog dial.
FRAME (Does not appear when SYSTEM is set to 625.)	Set the drop-frame mode. • DF*: Drop-frame • NDF: Non-drop-frame

Page 3 (When MODE is set to STD or INT only)

Item	Setting and values (factory default settings shown by an asterisk)
DELETE LAST [a]	Delete the most recently recorded clip. A confirmation message appears. When MODE is set to DUP, it is not possible to delete the latest file alone.
PARAREC (When MODE is set to STD only)	Switch coupled (parallel) recording with the camcorder on or off. • OFF* • ON When MODE is set to DUP, this is always ON. When MODE is set to INT, forcibly set to OFF.
CACHE (When MODE is set to STD only)	Set the length of cache recording. • 0s (0 second) • 2s (2 seconds) • 4s (4 seconds) • 8s (8 seconds) When MODE is set to DUP, the cache recording function does not work. When MODE is set to INT, forcibly set to 0s.

a) While deleting the last recorded clip, the cache recording function does not operate. Therefore, after deleting the clip, only the signal input through the i.LINK interface can be recorded.

Page 4 (When MODE is set to INT only)

Item	Setting and values (factory default settings shown by an asterisk)
INT TIM	Set the recording interval. • 0.5m*: 30 seconds • 1m: 1 minute • 5m: 5 minutes • 10m: 10 minutes
INT REC	Set the length of each recording. • 0.5s* (0.5 seconds) • 1s (1 seconds) • 1.5s (1.5 seconds) • 2s (2 seconds)

Page 5

Item	Setting and values (factory default settings shown by an asterisk)
PB INH [a]	Select whether or not to disable operation of the ⏮, ▶, and ⏭ buttons on the DSR-DU1. • ON: Disable. • OFF*: Enable.
TALLY	Select whether or not to disable the recording tally. • OFF: Disable. • ON*: Enable.
DELETE ALL	Delete all data from the hard disk. A confirmation message appears.
ENHANCE	Select whether or not to display menu pages 6 and 7 (enhanced menu). • OFF: Do not display. • ON: Display.

a) Switching the i.LINK output takes several seconds. To avoid losing a shooting opportunity because of the delay in switching to recording after camcorder playback, it is recommended to set this to "ON." In this case, the ⏮, ▶, and ⏭ buttons on the DSR-DU1 are disabled.

Page 6

Item	Setting and values (factory default settings shown by an asterisk)
CHECK DISK	Check the hard disk for usability.[a] The meanings of indications showing the result of CHECK DISK are as follows. • "DISK: OK": The hard disk can be used. • "DISK: NG": The hard disk cannot be used. • "B-PNT: XXX": A total of "XXX" bad points (points where recording may not be performed normally) have been detected. When the CHECK DISK function ends, select EXIT.

a) The CHECK DISK function takes about 3.5 hours. To inhibit recording on all of the detected bad points, it is necessary to carry out the DELETE ALL operation in menu page 5.

Page 7

Item	Setting and values (factory defaults are unset)
SYSTEM	Video signal format. (Factory default is unset) • NONE: Unset • 525U: NTSC. The date format is mm/dd/yyyy. • 525J: NTSC. The date format is yyyy/mm/dd. • 625: PAL. The date format is dd/mm/yyyy.
DATE PRESET	Switch to the screen for setting the date and time (hh:mm:ss) preset values. Carry out the operation with the jog dial. [a]

a) The sequence for setting the date depends on the selected SYSTEM setting.

Making Menu Settings

Use the following procedure.

1 Press the MENU button on the front panel.

The menu appears.

2 Turn the jog dial to select the desired page.

3 Press the jog dial.

It is now possible to select an item.

4 Turn the jog dial to select the desired item, and press to confirm.

When "TC PRESET," "UB PRESET" or "DATE PRESET" item was selected

In the screen for setting the preset value, turn the jog dial to select the digit in the desired place, and press to confirm. Next, turn the jog dial to change the value and press to confirm.
After repeating these operations for all desired places, select "SET" for preset value confirmation, or select "EXIT" to cancel.

When the "DELETE LAST" or "DELETE ALL" item was selected

A confirmation message appears. Select "OK" or "EXIT."

Note

The PC REM, DELETE LAST, DELETE ALL, and SYSTEM settings can only be set either immediately after powering on the DSR-DU1, or while it is in stop mode.

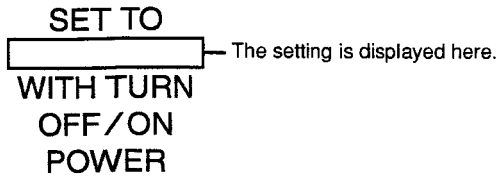
5 Turn the jog dial to select the desired setting, and press to confirm.

When the "MODE" item is changed to "DUP" or "INT"

A list appears, showing the other items which will be changed. Select "OK" or "EXIT."
(After changing from "DUP" or "INT" to "STD," a list appears of items which will be changed back to their settings before selecting DUP or INT.)

When the "PC REMOTE" or "SYSTEM" item is changed

The LCD monitor shows the following.



When you selected "OK," a message "TURN OFF/ON POWER!!" appears. Power off the DSR-DU1, then power it on again.

6 To make a setting on a different page, reselect "PAGE0x" on the top row, then repeat from step **3**.

7 To end the menu settings, press the MENU button.

LCD and Indicator Error Indications

If a problem should occur in the DSR-DU1, the LCD, and the WARNING and tally/access indicator show the problem.
The following table shows the relation between these indications and the problem.

: Constant
: 1 flash/second
: 4 flashes/second

LCD indication	WARNING indicator	Tally/access indicator	Problem	Operation
MEMORY (constant)			During recording, the shockproof memory has become full.	Continues
DISK (1 flash/second)			• During recording, the hard disk capacity is almost used up. • During recording, the total number of clips created has exceeded 750.	Continues
		–	• Other than during recording, the hard disk is almost full. • Other than during recording, the total number of clips created has exceeded 750.	Continues
DISK (4 flashes/ second)			During recording or when recording is paused, the hard disk capacity is completely used up.	Stops
		–	Other than during recording or while recording is paused, the hard disk is full.	Continues
BATT (1 flash/second)			During recording, main battery is almost exhausted.	Continues
		–	Other than during recording, the main battery is almost exhausted.	Continues
BATT (4 flashes/ second)			Main battery is exhausted.	Stops
Li (1 flash/second)		–	Backup battery is almost exhausted.	Continues
Li (4 flashes/ second)		(During recording only)	Backup battery is exhausted.	Stops, if the operation is recording. Continues, if the operation is playback.
No Input!			The i.LINK input has disappeared during recording.	Continues (but recording to hard disk stops)
ILL Input!			A fault was detected on the i.LINK input during recording.	Continues (but recording to hard disk stops)
i.LINK [a]	–	–	In i.LINK input mode, i.LINK input cannot be detected.	Continues

a) If the DSR-DU1 and the connected camcorder are both powered on, there may be no i.LINK input from the camcorder to the DSR-DU1, depending on the camcorder. In this case, on the LCD monitor of the DSR-DU1, "i.LINK" flashes once per second; temporarily disconnect the i.LINK cable.

Specifications

DSR-DU1 Video Disk Unit

Power supply voltage
7.2 V DC (using battery)
8.4 V DC (using AC adaptor)
Power consumption
5.6 W
Operating temperature
0 ºC to 40 ºC (32ºF to 104ºF)
Storage temperature
– 20 ºC to +60 ºC (–4ºF to + 140ºF)
Operating humidity
Maximum 85% (no condensation)
Operating altitude
–300 m to +3,000 m (–984 feet to +9,843 feet)
External dimensions (w/h/d, excluding protrusions)
Approx. 101 × 44 × 142 mm (4 × 1 3/4 × 5 5/8 inches)
Mass Approx. 500 g (1 lb 1 oz)
Input connectors
DC IN (for power supply input)
Remote (4-pin, mini-jack)
DV IN/OUT (i.LINK interface IEEE 1394 compliant, 4-pin)
Supplied accessories
i.LINK cable (4-pin - 4-pin) (1)
Remote controller (1)
Backup battery (CR2032) (1)
Case (1)
Operation Instruction (1)
CD-ROM manual (1)
Optional accessories
CA-DU1 Camera Adaptor
AC-V700A AC adaptor/charger
NP-F960/F750 Battery Pack
i.LINK cables (4-6-pin):
IL4615A (1.5 m / 5 feet) / IL4635A (3.5 m / 11 feet)
i.LINK cables (4-4-pin):
IL4415A (1.5 m) / 443N (3.5 m / 11 feet)

CA-DU1 Camera Adaptor (option)

Power supply voltage
11 to 17 V DC
Operating temperature
0 ºC to 40 ºC (32ºF to 104ºF)
Storage temperature
– 20 ºC to +60 ºC (–4ºF to + 140ºF)
Operating humidity
Maximum 85% (no condensation)
External dimensions (w/h/d, excluding protrusions)
Approx. 101 × 54.5 × 143 mm (4 × 2 1/4 × 5 3/4 inches)
Mass Approx. 400 g (14 oz)
Input connectors
DC IN (XLR 4-pin, male, for power supply input)
Remote (4-pin, mini-jack)
DV IN/OUT (i.LINK interface IEEE 1394 compliant, 4-pin)
Supplied accessories
i.LINK cable (4-pin - 6-pin) (1)
Operation Guide (1)
Optional accessories
AC-DN1 AC adaptor
BC-L120 AC adaptor/charger
BP-L40/L60A/L90A/M50/M100 Battery Pack

Design and specifications are subject to change without notice.

Getting the Best Performance From the Battery

- If the ambient temperature is low, the battery performance deteriorates, reducing the operating time. To maximize the operating time, the following techniques are recommended.
  – Keep the battery warm in a pocket, and load it into the unit immediately before shooting.
- During recording or playback, power off whenever the unit is not operating.
- Have enough batteries ready to last two or three times the expected shooting duration, and test shoot with them before the session.
- The battery is not waterproof. Be careful not to allow it to get wet.

Indication of remaining battery capacity

If the battery fails even though the indication suggests there is adequate capacity, fully recharge the battery. This will correct the remaining capacity indication. However, if the battery is used for a long time at high temperature, is left fully charged, or has been very heavily used, the indication may not be correctly restored. In this case, use the indication time as a rough guideline to estimate the remaining capacity.

Battery storage

- If the battery is not used for a long time, to maintain its performance, it should be fully charged and then fully discharged with this unit about once a year. Remove the battery from the unit, and store in a cool dry place.
- To fully discharge the battery with this unit, leave it powered on until the battery is exhausted.

Battery lifetime

- The battery has a limited lifetime. As it is repeatedly used over a long time interval, the capacity gradually reduces. When the operating time is much less than the original value, it is time to replace the battery.
- The lifetime varies from one individual battery pack to another, depending on the pattern of use, and how it has been stored.